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APPLN 96/65890

AMENDED

46684 HKS:ZS



P/00/001
Section 29

AUSTRALIA
Patents Act 1990

PATENT REQUEST: STANDARD PATENT

We, being the persons identified below as the Applicant, request the grant of a patent to the persons identified below as the Nominated Persons, for an invention described in the accompanying standard complete specification.

Full application details follow.

[71] Applicant:

BARRIE RAYMOND STRATTON and SARITA MAY STRATTON

Address:

both of Waters Road, Bridgewater, State of South Australia, Australia

[70] Nominated Person:

BARRIE RAYMOND STRATTON and SARITA MAY STRATTON

[54] Invention Title:

BREATHING ASSISTANCE IMPROVEMENTS

[72] Name of actual inventor:

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[74] Address for service in Australia

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Attorney Code CO

BARRIE RAYMOND STRATTON
and SARITA MAY STRATTON
By their Patent Attorneys
COLLISON & CO

HOWARD SCHULZE

TO:

THE COMMISSIONER OF PATENTS

WODEN ACT 2608

46664 HKS:LL

SEE AMENDED PATENT REQUEST
FILED: 27/10/97

P/00/001
Section 29

AUSTRALIA
Patents Act 1990

PATENT REQUEST: STANDARD PATENT

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Full application details follow.



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[54] Invention Title:

BREATHING ASSISTANCE IMPROVEMENTS

[72] Name of actual inventor:

BARRIE STRATTON

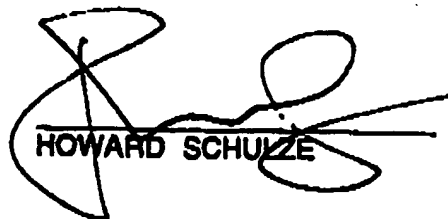
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Dated this 27th day of September 1996

BARRIE STRATTON and
SARITA MAY STRATTON
By their Patent Attorneys
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HOWARD SCHULTE

A014014 27 SEP 98

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P/00/008
Section 29(1)
Regulation 3.1(2)

AUSTRALIA
Patents Act 1990

NOTICE OF ENTITLEMENT

We, **BARRIE STRATTON and SARITA MAY STRATTON**
both of Waters Road, Bridgewater, State of South Australia, Australia

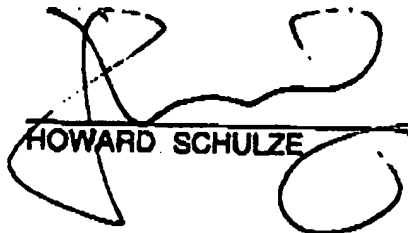
being the Applicants in respect of the Application filed herewith, state the following:-

The persons nominated for the grant of the patent have entitlement by reason of the following:

Barrie Stratton is the inventor. Sarita May Stratton is entitled to be a joint applicant and proprietor of any rights pursuant to an assignment from the inventor, the assignment being to the extent that the applicants are equal co-owners of the rights.

Dated this 27th day of September 1996

**BARRIE STRATTON and
SARITA MAY STRATTON**
By their Patent Attorneys
COLLISON & CO.


HOWARD SCHULZE

(12) PATENT ABSTRACT (11) Document No. AU-A-65890/96
(19) AUSTRALIAN PATENT OFFICE

- (54) Title
BREATHING ASSISTANCE IMPROVEMENTS
- (51)^a International Patent Classification(s)
A61F 006/86 A63B 023/18 A63B 071/00
- (21) Application No. : 65890/96 (22) Application Date : 27/09/96
- (43) Publication Date : 02/04/98
- (71) Applicant(s)
BARRIE RAYMOND STRATTON; SARITA MAY STRATTON
- (72) Inventor(s)
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COLLISON & CO, GPO Box 2658, ADELAIDE SA 5001
- (57)

Assistance for breathing is provided for both humans and animals by providing for a member to adhere along one or both sides of a nose and having a shape so that a part of the member can adhere over a hard part of the nose and then in cantilever fashion adhere to and thereby pour out, soft flesh forming an outer side of a nasal passage so as to keep this open even with heavy breathing. The specification describes the application for humans and for horses and features of having a strut essentially defining the shape of the member as being deformable and resilient.

Claim

1. An arrangement for assisting breathing wherein there is a member adhering to the external surface of a side of a nose and extending along a side of that nose so that the member is positioned to have a part over a rigid part located part way to the back of the nose and a further part over a forward part which is forward of the rigid part of the nose and shaped and otherwise characterised so as to maintain a dilation position of the said soft part and therefore the adjacent nasal passage.

46564 HKS:LL

P/00/011
Regulation 3.2

AUSTRALIA
Patents Act 1990

COMPLETE SPECIFICATION
FOR A STANDARD PATENT
ORIGINAL

Name of Applicant:
Barrie Raymond Stratton
BARRIE STRATTON and SARITA MAY STRATTON

Actual Inventor:

BARRIE STRATTON

Address for Service:

COLLISON & CO., 117 King William Street, Adelaide, S.A. 5000

Invention Title:

BREATHING ASSISTANCE IMPROVEMENTS

The following statement is a full description of this invention,
including the best method of performing it known to us:



This invention relates to breathing assistance and means to assist both humans and some animals to breathe more freely.

The problem is the same problem as that set out in US Patent 5533499 which is directed to a nasal dilator which assists in resisting the drawing in of outer wall tissue during breathing.

It is known that air passing through a passage will, especially where that passage is other than circular, cause a coming together of the closer walls. This implicitly causes a further narrowing of the passageway. This effect is known to occur with many and the result is that they either are forced to breathe through their mouth or suffer effects such as snoring and even sleep apnoea which can result.

The US Patent 5533499 proposes a flexible strip which is designed to traverse from one side of the nose to the other and so that one end adheres to the skin adjacent one nasal passage and another end adheres to the skin adjacent the other nasal passage and the flexible strip which has two resilient bands by naturally springing apart drags the skin and therefore the outer wall tissue outwardly to keep the respective passages more open.

There are problems with this system which can be reduced or avoided.

An object of this invention is to provide the public with a useful alternative.

According to one form of this invention although this need not be the only or indeed the broadest form of this there is provided an arrangement for assisting breathing wherein there is a member adhering to the external surface of a side of a nose and extending along the nose so that the member

is positioned to have a part over a rigid part located part way to the back of the nose and a further part over a forward part which is forward of the rigid part of the nose and shaped and otherwise characterised so as to hold the said soft part whereby to provide an outward pressure to maintain dilation of the adjacent nasal passage.

In preference as one alternative the nose is the nose of a person.

In preference as a further alternative the nose is the nose of a horse.

In preference as a further alternative again the nose is the nose of a dog.

In preference each strip comprises a first sheet of pliable material having an outermost face having thereon a pressure responsive adhesive, a member attached to and extending behind this which is pliable and sufficiently rigid to resist pressure of the outer wall tissue to close the respective nasal passage when a higher velocity of air moves therethrough.

In preference there is an arrangement for assisting breathing wherein a member has a part attached by adhesion to the skin immediately above a more rigid part of the nose and a further part of the member is attached by adhesion to the skin immediately above a portion of the nose which is soft flesh adjacent the nostril, and the member resists pressure to narrow the nasal passage thereby.

In preference the member is comprised of a laminate of a first pliable sheet with an outer surface coated by adhesive, a strut shaped and otherwise characterised to be located along a side of a nose, and a second pliable sheet holding the strut between itself and the first sheet.

In a further preferred arrangement there is an arrangement for assisting breathing by being attachable by adhesion along one side of a nose to effect a dilation force of a nasal passage characterised in that the member is a laminate comprised of a first pliable sheet with an outer surface coated by

- 5 adhesive, a strut, and a second pliable sheet holding the strut between itself and the first sheet, the member having a shape with both ends being substantially straight with the ends being inclined at an angle one with respect to the other.

In preference for horses the angle is approximately 30 degrees.

- 10 In preference the strut is comprised of aluminium.

For a better understanding of this invention it will now be described with reference to preferred embodiments which shall be described with the assistance of drawings wherein:

- 15 FIG 1 is a front view of a person with the arrangement according to the first embodiment fitted to both sides of their nose;

FIG 2 is a side view of the same embodiment installed in place on the side of the nose;

FIG 3 is an exploded view of the components making up the element of the first embodiment;

- 20 FIG 4 is a side elevation of the element of the first embodiment;

FIG 5 is a side perspective view of a horse incorporating the invention according to a second embodiment;

FIG 6 is a plan view of the element according to the second embodiment;
and

FIG 7 is a side cross sectional view of the second embodiment as shown
in preceding figures 5 and 6.

- 5 Now referring to the drawings in detail a member 1 in the form of a strip and
comprised of a first sheet 2 having on an underneath side an adhesive
chosen to enable contact pressure between the adhesive and the skin of a
nose to ensure that adhesion will occur with sufficient strength to then enable
the sheet to act to pull or hold the relevant skin of the nose and its underlying
10 soft tissue in a dilation position.

- The structure of a human nose is such that there is a hard part that starts
about half way up the nose which then extends back from the nose to join with
or be part of the skull of the person. What is being achieved in accord with
this invention is that this hard part which is shown by a defining dotted line in
15 the drawings at 3 is used to support a part of the strip 1 and, as in the manner
of a cantilever, this can be used to anchor the one end of the strip so that it
can be used to locate the lower (which is to say the part of the nose further
down the face) soft tissue of the side of the nose in an outwardly dilated
position.

- 20 This is achieved by having the shape of the strip defined by a strut 4 which is
a thin strip of aluminium which is sandwiched between the sheet 2 and a top
sheet 5 and has a shape that in so far that it is elongated, has one end part 6
approximately straight, and another end part 7 approximately straight and
these two end parts 6 and 7 are at an angle of approximately 60 degrees
25 (shown at 8) one to the other. Each end 9 and 10 of each end part 6 and 7 is
however slightly turned which appears to provide a slightly improved effect.

- The strut 4 is chosen from aluminium of 0.33 mm thickness and of a grade such that it can be changed in shape simply by using finger pressures but not so soft that when in position of holding a dilation position that it will readily distort and therefore not do the job. Other materials will also achieve this task but aluminium has been found to be most suitable. One of the characteristics that is useful is the fact that the aluminium is also resilient so that when deformed into position the aluminium can be deformed further so as to assist in applying further continuing pressure of the outer tissue adjacent the marrow part of the nasal passage. As a guide to the extent of resiliency the strut material having the dimensions of 20mm x 3mm x 0.33mm if anchored at one end so as to be supported as a cantilever from a 1mm of anchored end then 30 grams will deflect the outer end by 3mms. These dimensions are also the dimensions of the strut when bent as described that are most appropriate for use by adult humans for the invention. As a guide to the size range of a strut for adult humans the strut can be usefully within the range of from 15-20 mm in length and 2.5-3.5 mm in width.

The bend in the strut 4 should be located just adjacent to where the hard part begins. If this is located on the hard part of the nose then it is found that soreness can develop after only some few hours of use.

- 20 The material to be used for the sheets 2 and 5 and adhesive both for the outer face of the sheet 2 and the joining between the strut 4 and the sheet 5 is such that it will need to be compatible for use against the skin of humans. Hypo-allergenic material would be appropriate.

- 25 In use the element is located so that the bend is just below the hard part of the nose and on one side of the nose and the soft tissue is then manipulated out to be adhered to the adhesive outer surface of the sheet 2. The strut can

thereafter be changed in shape by finger pressure. The concept however is that this can then hold outwardly the soft tissue adjacent the narrow part of the nasal passage and therefor both resist it being drawn in when greater air volume passes through but also for day to day use for those with deformed
 5 nasal passage shapes or those suffering from incidental blockage from rhinitis will also find value in the arrangement.

This concept therefore differs in some important ways from that disclosed in the US Patent in that this concept is found not to be so visually obvious because it does not go across the bridge of the nose, it seems to allow for
 10 more comfortable use and from experiments conducted so far the results appear to be even more effective in providing nasal clearance.

The elements can be used for one side only of the nose if desired.

Now referring to Figures 5, 6 and 7 which illustrate the application of the invention to a horse this is an arrangement very similar to that described for
 15 the first embodiment in that the element 11 is comprised of three layers where a first is a sheet 12 with an outermost contact adhesive at 13, a middle layer is a strut 14 comprised of 0.33 mm thickness 6 mm width and 90 mm length of aluminium, and the top sheet 15 covers the other two. The strut 14 is bent in the middle at 16 to have two ends 17 and 18 that are each approximately
 20 straight but which are inclined 30 degrees one to the other as shown at 16.

The shape of the nasal passage of a horse 20 and the location of a hard part 21 closely behind the open end of the nostril has meant that the concept works very well also for horses. Accordingly, as shown, the element 11 is attached to be in line along the elongate direction of a horses head 22 and is
 25 placed in position by opening the nostril passage out to then be held in the position shown.

The same arrangement is used for both sides of the horses head. In practise the arrangement gives very good results for these animals and it is believed that accordingly other animals that need to have enhanced performances such as dogs and sometimes camels may also be advantaged.

- 5 Throughout this specification the purpose has been to illustrate the invention and not to limit this.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An arrangement for assisting breathing wherein there is a member adhering to the external surface of a side of a nose and extending along a side of that nose so that the member is positioned to have a part over a rigid part located part way to the back of the nose and a further part over a forward part which is forward of the rigid part of the nose and shaped and otherwise characterised so as to maintain a dilation position of the said soft part and therefore the adjacent nasal passage.
2. An arrangement for assisting breathing as in claim 1 further characterised in that the nose is the nose of a person.
3. An arrangement for assisting breathing as in claim 1 further characterised in that the nose is the nose of a horse.
4. An arrangement for assisting breathing as in claim 1 further characterised in that the nose is the nose of a dog.
5. An arrangement for assisting breathing as in any one of the preceding claims further characterised in that each strip comprises a first sheet of pliable material having an outermost face having thereon a pressure responsive adhesive, a member attached to and extending behind this first sheet and adapted to maintain a selected shape of the strip to effect a maintenance of the selected position of the soft tissue and therefore its dilation effect.
6. An arrangement for assisting breathing wherein a member has a part attached by adhesion to the skin immediately above a more rigid part of the nose and a further part of the member is attached by adhesion to the skin

Immediately above a portion of the nose which is soft flesh adjacent the nostril, and the member effects a dilation pressure of the nasal passage thereby.

- 5 7. An arrangement for assisting breathing as in the immediately preceding claim further characterised in that the member is comprised of a laminate of a first pliable sheet with an outer surface coated by a contact adhesive, a strut of deformable material, and a second pliable sheet holding the strut between itself and the first sheet.
- 10 8. An arrangement for assisting breathing by being attachable by adhesion along one side of a nose to effect a dilation force to a nasal passage of the nose characterised in that the member is a laminate comprised of a first pliable sheet with an outer surface coated by adhesive, a strut, and a second pliable sheet holding the strut between itself and the first sheet, the member having a shape with both ends being substantially straight with the ends
15 being inclined at an angle one with respect to the other.
9. An arrangement for assisting breathing as in the immediately preceding claim further characterised in that the angle is approximately 60 degrees.
10. An arrangement for assisting breathing as in the preceding claim 8 further characterised in that the angle is approximately 30 degrees.
- 20 11. An arrangement as in any one of the preceding claims where the size of the strut for a human adult lies within the range of from 15 to 20 mm in length and 2.5 to 3.5 mm in width.
12. An arrangement as in claim 9 further characterised in that the strut is comprised of aluminium.

13. An arrangement substantially as described in the specification with reference to and as illustrated by figures 1-4 of the accompanying drawings.

14. An arrangement substantially as described in the specification with reference to and as illustrated by 5, 6 and 7 of the accompanying drawings.

5

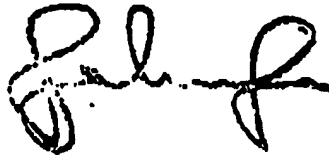
Dated this 27th day of September 1996

Barrie Raymond Stratton

BARRIE STRATTON and SARITA MAY STRATTON

By their Patent Attorneys

COLLISON & CO.



ABSTRACT

Assistance for breathing is provided for both humans and animals by providing for a member to adhere along one or both sides of a nose and having a shape so that a part of the member can adhere over a hard part of the nose and then in cantilever fashion adhere to and thereby pour out, soft flesh forming an outer side of a nasal passage so as to keep this open even with heavy breathing. The specification describes the application for humans and for horses and features of having a strut essentially defining the shape of the member as being deformable and resilient.



FIG 1

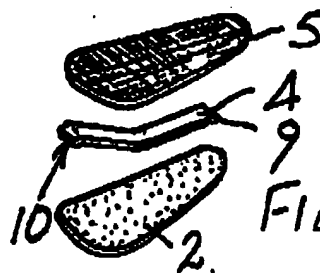


FIG 2

FIG 3

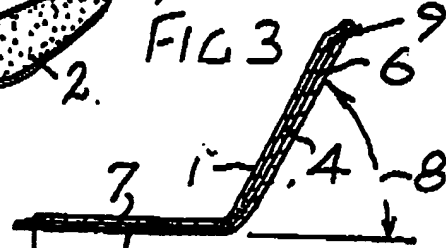
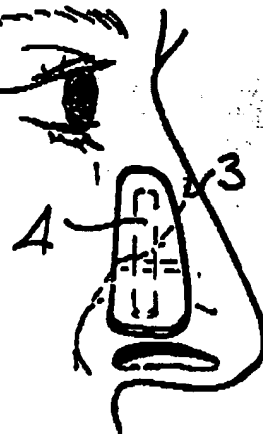


FIG 4



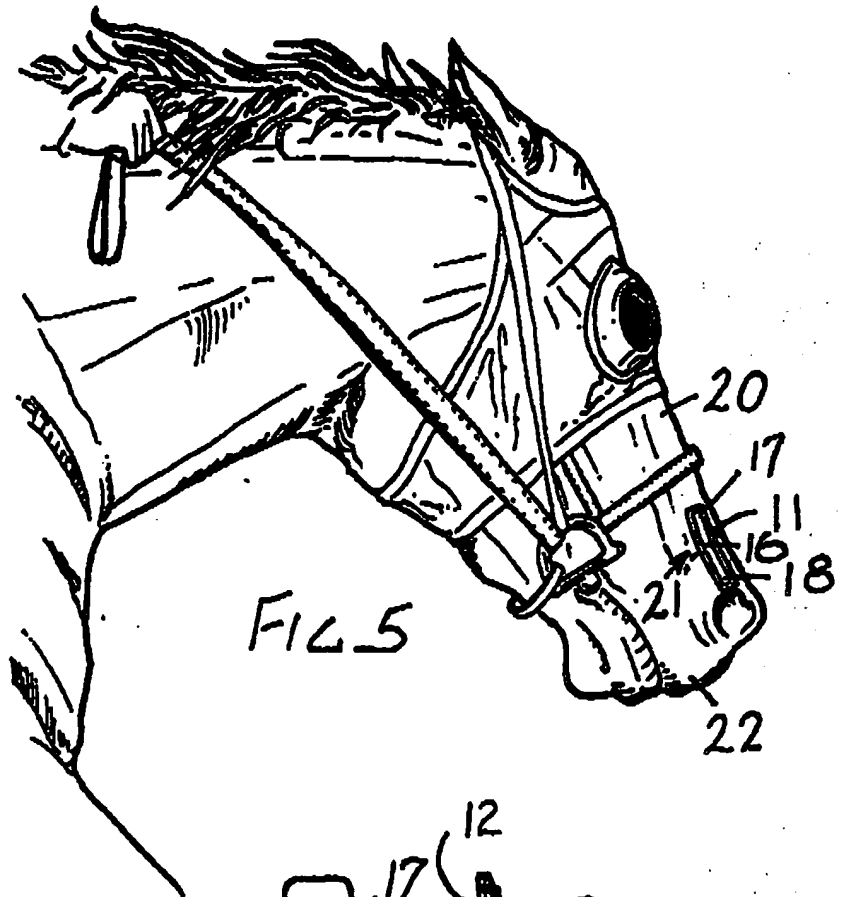


FIG 5

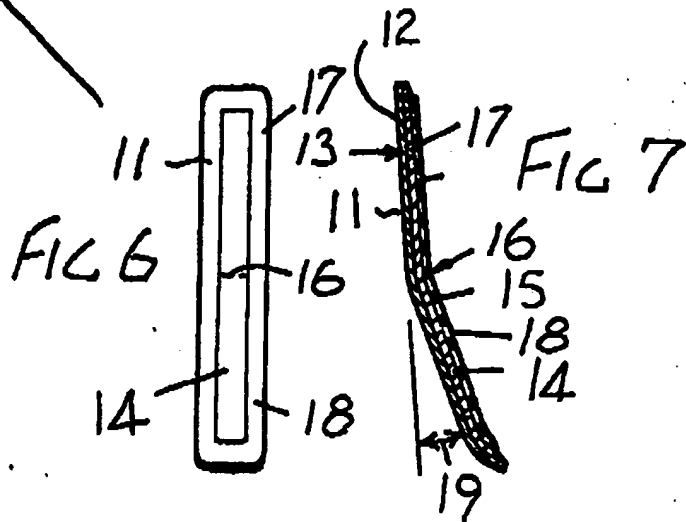


FIG 6

FIG 7

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PATENT 702632
AMENDED



P/00/001
Section 29

AUSTRALIA
Patents Act 1990

PATENT REQUEST: STANDARD PATENT

We, being the persons identified below as the Applicant, request the grant of a patent to the persons identified below as the Nominated Persons, for an invention described in the accompanying standard complete specification.

Full application details follow.

[71] Applicant:

BARRIE RAYMOND STRATTON and SARITA MAY STRATTON

Address:

both of Waters Road, Bridgewater, State of South Australia, Australia

[70] Nominated Person:

BARRIE RAYMOND STRATTON and SARITA MAY STRATTON

[54] Invention Title:

BREATHING ASSISTANCE IMPROVEMENTS

[72] Name of actual Inventor:

BARRIE RAYMOND STRATTON

[74] Address for service in Australia

COLLISON & CO., 117 King William Street, Adelaide, S.A. 5000

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**BARRIE RAYMOND STRATTON
and SARITA MAY STRATTON
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TO:

THE COMMISSIONER OF PATENTS

WODEN ACT 2606

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Section 29(1)
Regulation 3.1(2)

AUSTRALIA
Patents Act 1990

NOTICE OF ENTITLEMENT

We, BARRIE STRATTON and SARITA MAY STRATTON
both of Waters Road, Bridgewater, State of South Australia, Australia

being the Applicants in respect of the Application filed herewith, state the following:-

The persons nominated for the grant of the patent have entitlement by reason of the following:

Barrie Stratton is the inventor. Sarita May Stratton is entitled to be a joint applicant and proprietor of any rights pursuant to an assignment from the inventor, the assignment being to the extent that the applicants are equal co-owners of the rights.

Dated this 27th day of September 1996

BARRIE STRATTON and
SARITA MAY STRATTON
By their Patent Attorneys
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(12) PATENT ABRIDGMENT (11) Document No. AU-B-65890/96
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 702632

(54) Title
BREATHING ASSISTANCE IMPROVEMENTS

(51)^a International Patent Classification(s)
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(21) Application No. : 65890/96 (22) Application Date : 27.09.96

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(71) Applicant(s)
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(72) Inventor(s)
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(56) Prior Art Documents
US 5546929
WO 94/23675
US 5533499

(57) Claim

7. An arrangement for assisting breathing wherein a member is adhered to an external surface of one side only of a nose wherein said member has a part attached by adhesion to the skin immediately above a bone part of the nose and a further part of the member is attached by adhesion to the skin immediately above a portion of the nose which is soft flesh adjacent the nostril, and the member effects an outward pressure to maintain dilation of the adjacent nasal passage thereby.

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Regulation 3.2

AUSTRALIA
Patents Act 1990

COMPLETE SPECIFICATION
FOR A STANDARD PATENT
ORIGINAL

Name of Applicant:
Barrie Raymond Stratton
~~BARRIE STRATTON~~ and SARITA MAY STRATTON

Actual Inventor:

BARRIE STRATTON

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COLLISON & CO., 117 King William Street, Adelaide, S.A. 5000

Invention Title:

BREATHING ASSISTANCE IMPROVEMENTS

The following statement is a full description of this invention,
including the best method of performing it known to us:



This invention relates to breathing assistance and means to assist both humans and some animals to breathe more freely.

The problem is the same problem as that set out in US Patent 5533499 which is directed to a nasal dilator which assists in resisting the drawing in of outer wall tissue during breathing.

It is known that air passing through a passage will, especially where that passage is other than circular, cause a coming together of the closer walls. This implicitly causes a further narrowing of the passageway. This effect is known to occur with many and the result is that they either are forced to breathe through their mouth or suffer effects such as snoring and even sleep apnoea which can result.

The US Patent 5533499 proposes a flexible strip which is designed to traverse from one side of the nose to the other and so that one end adheres to the skin adjacent one nasal passage and another end adheres to the skin adjacent the other nasal passage and the flexible strip which has two resilient bands by naturally springing apart drags the skin and therefore the outer wall tissue outwardly to keep the respective passages more open.

There are problems with this system which can be reduced or avoided.

An object of this invention is to provide the public with a useful alternative.

According to one form of this invention there is provided an arrangement for assisting breathing wherein there is a member adhering to an external surface of one side only of a nose, the member extending along a side of the nose in a position so that the member is positioned to have a first part of the member

adhering to the skin of the nose adjacent a bony structure located at a back of the nose, and the member has a further part which is closer to an inlet of the nostril of the nose than the first said part and adhering to the skin of the nose adjacent a soft part of the nose, with the member being shaped and otherwise
 5 being characterised so as to hold the soft part of the nose to provide outward pressure to maintain dilation of the adjacent nasal passage.

In preference the arrangement is further characterised in that there are two members adhering as described to a nose where there is one member for each respective side of the nose.

10 In preference as one alternative the nose is the nose of a person.

In preference as a further alternative the nose is the nose of a horse.

In preference as a further alternative again the nose is the nose of a dog.

In preference each member comprises a first sheet of pliable material having an outermost face having thereon a pressure responsive adhesive, a member
 15 attached to a back side of the first said sheet and adapted to maintain a selected shape of the strip to effect a maintenance of the selected position of the soft tissue and therefore its dilation effect.

In preference there is an arrangement for assisting breathing wherein a member is adhered to an external surface of one side only of a nose wherein
 20 said member has a part attached by adhesion to the skin immediately above a bone part of the nose and a further part of the member is attached by adhesion to the skin immediately above a portion of the nose which is soft flesh adjacent the nostril, and the member effects an outward pressure to maintain dilation of the adjacent nasal passage thereby.

In preference the member is comprised of a laminate of a first pliable sheet with an outer surface coated by a contact adhesive, a strut of deformable material and a second pliable sheet holding the strut between itself and the first sheet.

- 5 In a further preferred arrangement there is an arrangement for assisting breathing including a member being attachable by adhesion along one side of a nose to effect a dilation force of a nasal passage characterised in that the member is a laminate comprised of a first pliable sheet with an outer surface coated by adhesive, a strut, and a second pliable sheet holding the strut
- 10 between itself and the first sheet, the member being of elongate shape and is curved so as to have a side following a convex path and a contact adhesive being only on the convex side.

In preference the extent of the curve of the member is such that an orientation from one end will change through approximately 60 degrees to its other end.

- 15 In preference the extent of the curve of the member is such that an orientation from one end will change through approximately 30 degrees to its other end.

In preference the size of the strut for a human adult lies within the range of from 15 to 20mm in length and 2.5 to 3.5 in width.

In preference the strut is comprised of aluminium.

20

In another form of the invention there is provided a method for assisting breathing including the steps of ;

positioning a member to extend along a side of the nose in a position so that, the member is positioned to have a first part adhering to skin of the nose

- 25 adjacent a bony structure located at the back of the nose and, said member

has a further part which is closer to an inlet of the nostril of the nose than the first said part, wherein said member is shaped and otherwise characterised so as to hold the soft part of the nose to support the flesh to support dilation of the nasal passage.

- 5 and pressing said member to the skin of the nose adjacent a soft part of the nose so as to effect adhesion of said member to the nose.

For a better understanding of this invention it will now be described with reference to preferred embodiments which shall be described with the assistance of drawings wherein:

- 10 FIG 1 is a front view of a person with the arrangement according to the first embodiment fitted to both sides of their nose;

FIG 2 is a side view of the same embodiment installed in place on the side of the nose;

- 15 FIG 3 is an exploded view of the components making up the element of the first embodiment;

FIG 4 is a side elevation of the element of the first embodiment;

FIG 5 is a side perspective view of a horse incorporating the invention according to a second embodiment;

- 20 FIG 6 is a plan view of the element according to the second embodiment; and

FIG 7 is a side cross sectional view of the second embodiment as shown in preceding figures 5 and 6.

Now referring to the drawings in detail a member 1 in the form of a strip and comprised of a first sheet 2 having on an underneath side an adhesive chosen to enable contact pressure between the adhesive and the skin of a nose to ensure that adhesion will occur with sufficient strength to then enable the sheet to act to pull or hold the relevant skin of the nose and its underlying soft tissue in a dilation position.

The structure of a human nose is such that there is a hard part that starts about half way up the nose which then extends back from the nose to join with or be part of the skull of the person. What is being achieved in accord with this invention is that this hard part which is shown by a defining dotted line in the drawings at 3 is used to support a part of the strip 1 and, as in the manner of a cantilever, this can be used to anchor the one end of the strip so that it can be used to locate the lower (which is to say the part of the nose further down the face) soft tissue of the side of the nose in an outwardly dilated position.

This is achieved by having the shape of the strip defined by a strut 4 which is a thin strip of aluminium which is sandwiched between the sheet 2 and a top sheet 5 and has a shape that in so far that it is elongated, has one end part 6 approximately straight, and another end part 7 approximately straight and these two end parts 6 and 7 are at an angle of approximately 60 degrees (shown at 8) one to the other. Each end 9 and 10 of each end part 6 and 7 is however slightly turned which appears to provide a slightly improved effect.

The strut 4 is chosen from aluminium of 0.33 mm thickness and of a grade such that it can be changed in shape simply by using finger pressures but not so soft that when in position of holding a dilation position that it will readily distort and therefore not do the job. Other materials will also achieve this task but aluminium has been found to be most suitable. One of the characteristics

that is useful is the fact that the aluminium is also resilient so that when deformed into position the aluminium can be deformed further so as to assist in applying further continuing pressure of the outer tissue adjacent the marrow part of the nasal passage. As a guide to the extent of resiliency the strut

- 5 material having the dimensions of 20mm x 3mm x 0.33mm If anchored at one end so as to be supported as a cantilever from a 1mm of anchored end then 30 grams will deflect the outer end by 3mms. These dimensions are also the dimensions of the strut when bent as described that are most appropriate for use by adult humans for the invention. As a guide to the size range of a strut
- 10 for adult humans the strut can be usefully within the range of from 15-20 mm in length and 2.5-3.5 mm in width.

The bend in the strut 4 should be located just adjacent to where the hard part begins. If this is located on the hard part of the nose then it is found that soreness can develop after only some few hours of use.

- 15 The material to be used for the sheets 2 and 5 and adhesive both for the outer face of the sheet 2 and the joining between the strut 4 and the sheet 5 is such that it will need to be compatible for use against the skin of humans. Hypo-allergenic material would be appropriate.

- In use the element is located so that the bend is just below the hard part of the
- 20 nose and on one side of the nose and the soft tissue is then manipulated out to be adhered to the adhesive outer surface of the sheet 2. The strut can thereafter be changed in shape by finger pressure. The concept however is that this can then hold outwardly the soft tissue adjacent the narrow part of the nasal passage and therefor both resist it being drawn in when greater air
- 25 volume passes through but also for day to day use for those with deformed nasal passage shapes or those suffering from incidental blockage from rhinitis

will also find value in the arrangement.

This concept therefore differs in some important ways from that disclosed in the US Patent in that this concept is found not to be so visually obvious because it does not go across the bridge of the nose, it seems to allow for
 5 more comfortable use and from experiments conducted so far the results appear to be even more effective in providing nasal clearance.

The elements can be used for one side only of the nose if desired.

Now referring to Figures 5, 6 and 7 which illustrate the application of the invention to a horse this is an arrangement very similar to that described for
 10 the first embodiment in that the element 11 is comprised of three layers where a first is a sheet 12 with an outermost contact adhesive at 13, a middle layer is a strut 14 comprised of 0.33 mm thickness 6 mm width and 90 mm length of aluminium, and the top sheet 15 covers the other two. The strut 14 is bent in the middle at 16 to have two ends 17 and 18 that are each approximately
 15 straight but which are inclined 30 degrees one to the other as shown at 16.

The shape of the nasal passage of a horse 20 and the location of a hard part 21 closely behind the open end of the nostril has meant that the concept works very well also for horses. Accordingly, as shown, the element 11 is attached to be in line along the elongate direction of a horses head 22 and is
 20 placed in position by opening the nostril passage out to then be held in the position shown.

The same arrangement is used for both sides of the horses head. In practise the arrangement gives very good results for these animals and it is believed that accordingly other animals that need to have enhanced performances
 25 such as dogs and sometimes camels may also be advantaged.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An arrangement for assisting breathing wherein there is a member adhering to an external surface of one side only of a nose, the member extending along a side of the nose in a position so that the member is positioned to have a first part of the member adhering to the skin of the nose adjacent a bony structure located at a back of the nose, and the member has a further part which is closer to an inlet of the nostril of the nose than the first said part and adhering to the skin of the nose adjacent a soft part of the nose, with the member being shaped and otherwise being characterised so as to hold the soft part of the nose to provide outward pressure to maintain dilation of the adjacent nasal passage.
2. An arrangement as in claim 1 further characterised in that there are two members adhering as described to a nose where there is one member for each respective side of the nose.
3. An arrangement for assisting breathing as in either one of claim 1 or 2 further characterised in that the nose is the nose of a person.
4. An arrangement for assisting breathing as in either one of claim 1 or 2 further characterised in that the nose is the nose of a horse.
5. An arrangement for assisting breathing as in either one of claim 1 or 2 further characterised in that the nose is the nose of a dog.
6. An arrangement for assisting breathing as in any one of the preceding claims further characterised in that each member comprises a first sheet of pliable material having an outermost face having thereon a pressure

responsive adhesive, a member attached to a back side of the first said sheet and adapted to maintain a selected shape of the strip to effect a maintenance of the selected position of the soft tissue and therefore its dilation effect.

7. An arrangement for assisting breathing wherein a member is adhered to an external surface of one side only of a nose wherein said member has a part attached by adhesion to the skin immediately above a bone part of the nose and a further part of the member is attached by adhesion to the skin immediately above a portion of the nose which is soft flesh adjacent the nostril, and the member effects an outward pressure to maintain dilation of the adjacent nasal passage thereby.

8. An arrangement for assisting breathing as in the immediately preceding claim further characterised in that the member is comprised of a laminate of a first pliable sheet with an outer surface coated by a contact adhesive, a strut of deformable material, and a second pliable sheet holding the strut between itself and the first sheet.

9. An arrangement for assisting breathing including a member being attachable by adhesion along one side of a nose to effect a dilation force to a nasal passage of the nose characterised in that the member is a laminate comprised of a first pliable sheet with an outer surface coated by adhesive, a strut, and a second pliable sheet holding the strut between itself and the first sheet, the member being of elongate shape and is curved so as to have a side following a convex path and a contact adhesive being only on the convex side.

10. An arrangement for assisting breathing as in the immediately preceding claim further characterised in that an extent of the curve of the member is such that an orientation from one end will change through approximately 60

degrees to its other end.

11. An arrangement for assisting breathing as in the preceding claim 9 further characterised in that the angle is an extent of the curve of the member is such that an orientation from one end will change through approximately 30
5 degrees to its other end.

12. An arrangement as in any one of the preceding claims 8, 9, 10 or 11 where the size of the strut for a human adult lies within the range of from 15 to 20 mm in length and 2.5 to 3.5 mm in width.

13. An arrangement as in any one of preceding claims 8, 9, 10, 11, or 12
10 further characterised in that the strut is comprised of aluminium.

14. A method for assisting breathing including the steps of ;
positioning a member to extend along a side of the nose in a position so that, the member is positioned to have a first part adhering to skin of the nose
15 adjacent a bony structure located at the back of the nose and, said member has a further part which is closer to an inlet of the nostril of the nose than the first said part, wherein said member is shaped and otherwise characterised so as to hold the soft part of the nose to support the flesh to support dilation of the nasal passage.
20 and pressing said member to the skin of the nose adjacent a soft part of the nose so as to effect adhesion of said member to the nose.

15. A method for assisting breathing as claimed in claim 14 wherein said nose is a nose of a human.

25

16. A method for assisting breathing as claimed in claim 14 wherein said nose is a nose of a dog

17. A method for assisting breathing as claimed in claim 14 wherein said
5 nose is a nose of a horse.

18. An arrangement substantially as described in the specification with
reference to and as illustrated by figures 1-4 of the accompanying drawings.

10 19. An arrangement substantially as described in the specification with
reference to and as illustrated by figures 5, 6 and 7 of the accompanying
drawings.

15 20. A method substantially as described in the specification with reference
to and as illustrated in the accompanying drawings.

Dated this 2nd day of December 1998

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ABSTRACT

Assistance for breathing is provided for both humans and animals by providing for a member to adhere along one or both sides of a nose and having a shape so that a part of the member can adhere over a hard part of the nose and then in cantilever fashion adhere to and thereby pour out, soft flesh forming an outer side of a nasal passage so as to keep this open even with heavy breathing. The specification describes the application for humans and for horses and features of having a strut essentially defining the shape of the member as being deformable and resilient.





FIG 1

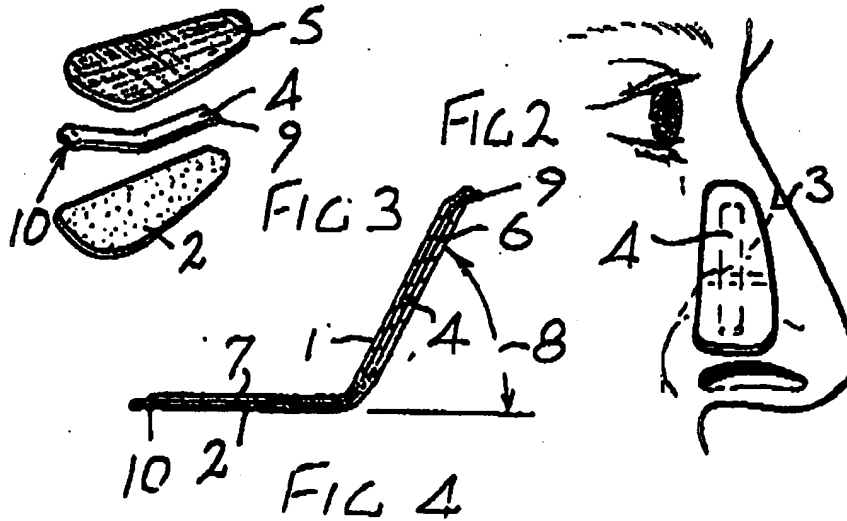


FIG 2

FIG 3

FIG 4

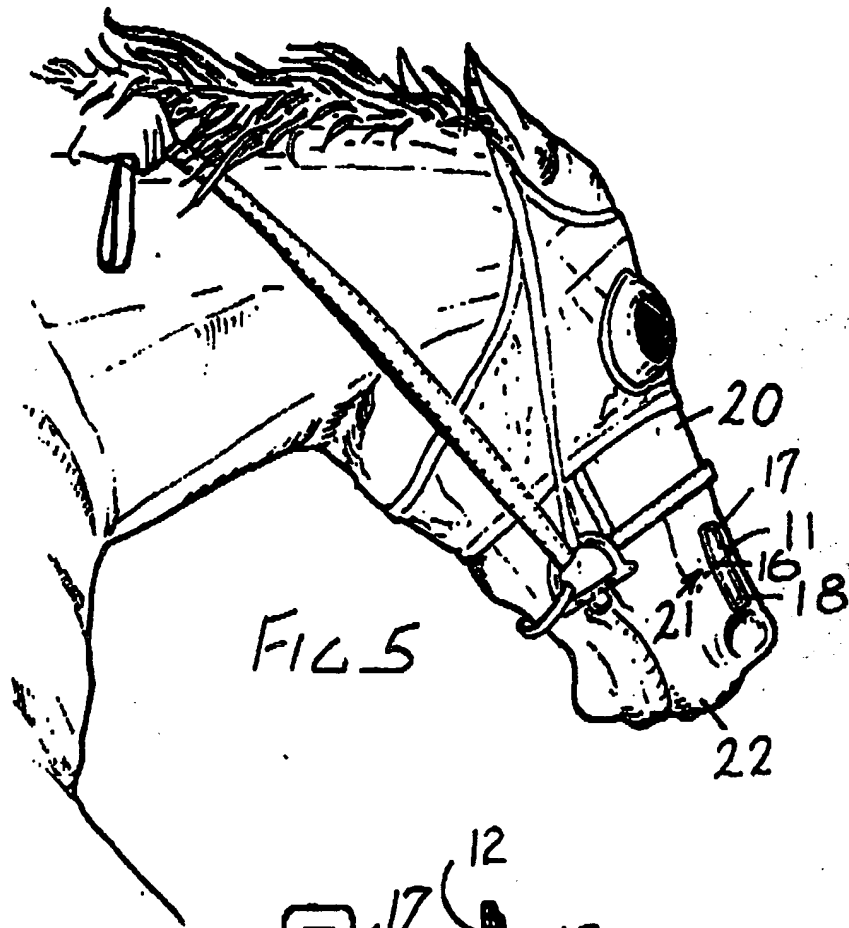


FIG 5

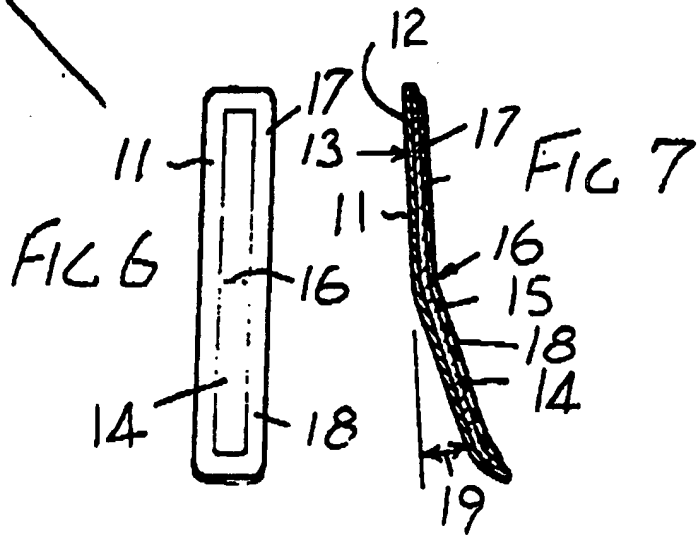


FIG 6

FIG 7